

a diamond coating that covers all areas of said at least one surface of said semiconductor substrate, except for selected portions of said stimulator electrodes; and means for making electrical connection with and providing operating power to said electronic circuitry formed on said at least one surface of said semiconductor substrate.

29. (New) A biocompatible device comprising:
a device for implantation in living tissue; and
a thin film of diamond deposited on said biocompatible device wherein said thin film forms at least a portion of a biocompatible hermetically sealed package.

30. (New) A method of hermetically sealing an implantable biocompatible device comprising:
providing an implantable biocompatible device; and
depositing a thin film coating of diamond on said implantable biocompatible device forming a biocompatible, hermetic seal.

31. (New) A biocompatible device which communicates electrical signals with tissue in a living body, comprising:
an electrode for stimulating living tissue, said electrode having at least one surface; and
a thin layer of diamond on said at least one surface of said electrode, wherein said electrode is suitable to form a capacitive relationship with the living tissue.

32. (New) The electric circuit of claim 31, wherein said thin layer of diamond is comprised of ultra-nanocrystalline diamond.

33. (New) A biocompatible device which communicates electrical signals with living tissue, comprising:

a first electrode; and

a second electrode separated from said first electrode by a thin layer of diamond insulating film thereby causing a capacitive relationship between said first electrode and said second electrode.

34. (New) The biocompatible device of claim 33 wherein said thin layer of diamond is comprised of ultra-nanocrystalline diamond.

BI 35. (New) The biocompatible device of claim 33 wherein said first electrode is proximate to said second electrode.

36. (New) The biocompatible device of claim 33 wherein said first electrode is coated with said thin layer of diamond.
